

Claims

- [c1] A method of making a printer cartridge, comprising:
assembling a first cartridge subassembly and a second cartridge subassembly,
wherein the first cartridge subassembly includes a first conductive terminal and
the second cartridge subassembly includes a second conductive terminal that is
normally in electrical contact with the first conductive terminal when the first
and second subassemblies are assembled; and
providing an external access to the first conductive terminal, the first
conductive terminal being inaccessible after assembling the printer cartridge.
- [c2] The method of claim 1, wherein providing the external access comprises:
coupling a conductive strip to the first conductive terminal; and
exposing a portion of the conductive strip externally to the printer cartridge
when the first and second subassemblies are assembled.
- [c3] The method of claim 2, wherein the first cartridge subassembly comprises a
developer roller subassembly and wherein coupling the conductive strip to the
first conductive terminal comprises attaching the conductive strip to a sensing
bar of the developer roller subassembly, wherein the sensing bar is connected
to the first conductive terminal.
- [c4] The method of claim 2, wherein the conductive strip is formed from one of
aluminum, copper or an alloy.
- [c5] The method of claim 2, wherein the conductive strip has a thickness of about 2
mils or less.
- [c6] The method of claim 2, wherein the conductive strip comprises:
a dead-soft aluminum strip; and
a conductive acrylic adhesive applied to the strip.
- [c7] The method of claim 1, wherein the second cartridge subassembly is a toner
hopper subassembly of a laser printer cartridge.
- [c8] The method of claim 7, further comprising coupling the at least first conductive
terminal and the at least second conductive terminal to a capacitor type device

to generate a signal responsive to a level of toner in the toner hopper subassembly.

[c9] The method of claim 1, further comprising measuring a continuity between the external access and the second conductive terminal.

[c10] The method of claim 1, further comprising refurbishing the printer cartridge by assembling the first cartridge subassembly and the second cartridge subassembly.

[c11] A method of making a printer cartridge, comprising:
attaching a conductive strip on one of a first printer cartridge subassembly or a second printer cartridge subassembly;
assembling the first cartridge subassembly in operative position with the second cartridge subassembly, wherein the first cartridge subassembly includes at least a first conductive terminal and the second cartridge subassembly includes at least a second conductive terminal that normally electrically contacts the at least first conductive terminal when the first and second cartridge subassemblies are assembled and wherein the at least first conductive terminal is inaccessible and the at least second conductive terminal is accessible when the first and second cartridge subassemblies are assembled;
coupling a first portion of the conductive strip to the at least first conductive terminal when assembling the first and second cartridge subassemblies; and
exposing a second portion of the conductive strip external to the first and second cartridge subassemblies when assembling the first and second cartridge subassemblies.

[c12] The method of claim 11, wherein attaching the conductive strip comprises attaching the conductive strip to a sensing bar, wherein the sensing bar is connected to the at least first conductive terminal.

[c13] The method of claim 11, wherein the first and second conductive terminals are located proximate to one end of the first and second printer cartridge assemblies and wherein attaching the conductive strip comprises attaching the conductive strip proximate to an end of the first or second printer cartridge

subassemblies opposite to the one end.

- [c14] The method of claim 11, wherein the conductive strip comprises:
a dead-soft aluminum strip; and
a conductive acrylic adhesive applied to the strip.
- [c15] A method of making a printer cartridge, comprising:
attaching a conductive strip to a sensing bar of a developer roller subassembly of the printer cartridge, wherein the sensing bar is electrically connected to at least a first conductive terminal;
assembling the developer roller subassembly in operative position with a toner hopper subassembly to form the printer cartridge, wherein the toner hopper subassembly includes at least a second conductive terminal that normally electrically contacts the at least first conductive terminal when the printer cartridge is assembled and wherein the at least first conductive terminal is inaccessible after forming the printer cartridge and the at least second conductive terminal is accessible after forming the printer cartridge; and
exposing a portion of the conductive strip after forming the printer cartridge.
- [c16] The method of claim 15, further comprising measuring an electrical continuity between the at least first conductive terminal and the at least second conductive terminal by measuring electrical continuity between the conductive strip and the at least second conductive terminal.
- [c17] The method of claim 15, wherein attaching the conductive strip to the sensing bar comprises attaching with a conductive adhesive.
- [c18] A printer cartridge, comprising:
a first cartridge subassembly;
a second cartridge subassembly attached to the first cartridge subassembly, wherein the first cartridge subassembly includes a first conductive terminal and the second cartridge subassembly includes a second conductive terminal that is normally in electrical contact with the first conductive terminal when the first and second subassemblies are attached; and
an external access to the first conductive terminal, the first conductive terminal

being inaccessible when the first cartridge subassembly is attached to the second cartridge subassembly.

- [c19] The printer cartridge of claim 18, wherein the external access comprises a conductive strip coupled to the first conductive terminal and wherein the conductive strip includes a portion exposed externally to the printer cartridge when the first and second subassemblies are attached.
- [c20] The printer cartridge of claim 18, wherein the conductive strip has a thickness of about 2 mils or less.
- [c21] The printer cartridge of claim 18, wherein the conductive strip comprises:
 - a dead-soft aluminum strip; and
 - a conductive acrylic applied to the strip.
- [c22] The printer cartridge of claim 18, further comprising a capacitor type device coupled to the first conductive terminal and the second conductive terminal to provide a signal responsive to a level of toner in the printer cartridge.